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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/378,108	08/20/1999	OLAF DICKER	99P7740US	8733

7590 07/16/2002

SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER
FERRIS, DERRICK W

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 07/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/378,108	DICKER ET AL.	
	Examiner	Art Unit	
	Derrick W. Ferris	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 1999* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 August 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. Drawings not objected to by draftsperson and examiner.

Information Disclosure Statement

2. References listed in the Information Disclosure Statement dated **3/2/01** has been considered by the Examiner and is attached herewith this Office action.

Nonstatutory Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. **Claims 1, 3-7, 9-18, and 20** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1, 15, 16 and 20** of U.S. Patent No. 6,272,353 to Dicker et al. (herein referred to as "patent"). Although the conflicting claims are not identical, they are not patentably distinct from each other because both present a method and a system for selecting unique channel frequencies for cordless communications for certain predetermined intervals in time (e.g., a first and second time scale). Specifically, **claims 1 and 15** of the patent disclose a base station and mobile station (i.e., first and second data station) that use circuitry (i.e., control logic) to establish at least one frequency to use for each

communications link (shown in figure 1 of the patent). Implying more than one unique channel frequency (noted also in light of figures 2 and 3 of the patent including comprising a frequency offset).

Not clearly disclosed by the claims are parameters relating specifically to spectral separation between each of the channels. Instead the claims recite in general a plurality of parameters used to select the frequency based on the quality of the individual link. However, it would have been obvious to a skilled artisan at the time of the invention to note that one such parameter could be the spectral separation such as for spread spectrum (**claim 20**; and in light of column 3, lines 45-51). Furthermore, in light of the application, the examiner notes that may of these such methods are known to those skilled in the art [page 4, lines 6-11]. Also included in the parameters for quality are those that are related to modeling interference which are well known in the art. In addition, it would have been obvious to a skilled artisan at the time of the invention to associate maximum throughput of information over the channels with the "quality" of a link. Finally, since the claims are open-ended, it would have been obvious to include or exclude features that applicant's consider critical or non-critical, respectively, for their invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1-18, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,151,352 to Taki et al. in view of U.S. Patent No. 6,377,609 to Brennan, Jr.

As to **claim 1, 7, 8, and 15**, disclosed in Taki et al. is a communications system capable of using a cordless [Taki et al. column 1, lines 12-14] handset and base station (i.e., a first and second data station) as shown in figure 1. Also noted in figure 2 is the control logic needed to transmit information between a first and second data station through a channel having a unique frequency. It is furthermore noted that this frequency is determined by parameters such as using an interference detector [Taki et al. column 3, lines 8-10].

Not explicitly stated by the reference is a specific parameter relating to spectral separation between each of the channels. However, it is noted that the reference does perform spread spectrum communications (i.e., uses spectral separation) as is well known in the art prior to applicant's invention [Taki et al. column 1, lines 25-27]. In addition, it is noted that only one particular unique frequency and channel are disclosed in the reference. However a skilled artisan would have recognized that more than one channel using a unique carrier frequencies could exist between two data stations as is well known in the art prior to applicant's invention. This is further exemplified by Brennan, Jr. who states, "the number of time periods/channels depends on the amount of data transmitted". For example, "where all the data can be transmitted in one data signal, only one time period/channel is needed" [Brennan, Jr. column 4, lines 14-17]. Hence for each remainder of a plurality of channels there would also exist a corresponding unique frequency as shown in Figure 7. In addition, the reference also inherently teaches a achieving a maximum throughput over the channels by avoiding as much interference as possible [id. column 4, lines 14-17]. Furthermore, with respect to **claim 8**, it is obvious

to a skilled artisan that the sum of the parts (i.e., individual channels) equals the whole (i.e., all the channels) with respect to achieving maximum throughput.

As to **claim 2**, each channel could operate in duplex [Taki et al. column 3, lines 17-22; column 8, lines 43-44].

As to **claim 3**, it is well known in the art by a skilled artisan to design the system such that a frequency offset is to be used between each unique channel frequency (such as that shown in Figure 7 of Brennan, Jr. and that also shown for the frequency hopping in figure 14 of Taki et al.

As to **claim 4, 13, and 16,** not disclosed by the references are the parameters for optimal spectral spacing between each unique channel frequency used for the individual channel, however, this is also well known by a skilled artisan prior to applicant's invention.

As to **claim 5, 12, and 14,** as noted previously, Taki et al. discloses a frequency hopping scheme. The frequencies to be chosen are presented in a frequency hopping table 36 [Taki et al.].

As to **claim 6, 9, 10, 17 and 18,** as also noted previously, Taki et al. discloses an interference detector used to detect (using select parameters) and minimize interference as is well known in the art [Taki et al. column 3, lines 7-12]. In addition, the crossfire detector 39 can be used for detecting (i.e., measuring) bit errors in the output for detecting errors for channels used in frequency hopping.

As to **claim 11 and 20**, Taki et al. also disclose a hop count (i.e., predetermined interval or time) for changing frequencies and determining parameters.

As mentioned previously, Taki et al. presents a frequency hopping system and method for a cordless system. Brennan, Jr. also presents a frequency hopping system and method for a wireless system in general using spread spectrum. Thus there exists a motivation for combing the subject matter as a whole for these two references.

7. **Claims 1-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,151,352 to Taki et al. in view of U.S. Patent No. 6,269,086 to Magana et al.

As to **claim 1, 7, 8, and 15**, disclosed in Taki et al. is a communications system capable of using a cordless [Taki et al. column 1, lines 12-14] handset and base station (i.e., a first and second data station) as shown in figure 1. Also noted in figure 2 is the control logic needed to transmit information between a first and second data station through a channel having a unique frequency. It is furthermore noted that this frequency is determined by parameters such as using an interference detector [Taki et al. column 3, lines 8-10].

Not explicitly stated by the reference is a specific parameter relating to spectral separation between each of the channels. However, it is noted that the reference does perform spread spectrum communications (i.e., uses spectral separation) as is well known in the art prior to applicant's invention [Taki et al. column 1, lines 25-27]. In addition, it is noted that only one particular unique frequency and channel are disclosed in the reference. However a skilled artisan would have recognized that more than one channel using a unique carrier frequencies could exist between two data stations as is well known in the art prior to applicant's invention. This is furthermore presented in the background of Magana et al. which covers the various cordless standards (as well as the hybrid

FDD/TDD system presented later on [Magana et al., column 4, lines 58-61]) noting that more than one carrier frequency for all the channels is not an optimal solution and also showing the motivation presented behind other standards for separate carrier channels [Magana et al. column 1, lines 55-67]. With respect to spectral separation between channels, Magana et al., further discloses that because FDD operations occur over separate frequencies for transmission and reception that more spectrum may be used in FDD communications, at least in comparison to typical TDD communications [Magana et al. column 4, lines 6-13]. In addition, Magana et al. also explores using different standards and a hybrid FDD/TDD implementation for achieving the highest possible throughput over various links; one such comparison is shown in figure 4b. In addition, the reference also inherently teaches a achieving a maximum throughput over the channels by avoiding as much interference as possible [id. column 4, lines 14-17]. Furthermore, with respect to **claim 8**, it is obvious to a skilled artisan that the sum of the parts (i.e., individual channels) equals the whole (i.e., all the channels) with respect to achieving maximum throughput.

As to **claim 2**, each channel could operate in duplex [Taki et al. column 3, lines 17-22; column 8, lines 43-44; Magana et al., column 2, lines 1-10; column 4, lines 56-62].

As to **claim 3**, it is well known in the art by a skilled artisan to design the system such that a frequency offset is to be used between each unique channel frequency (such as that shown for the frequency hopping in figure 14 of Taki et al.).

As to **claim 4, 13, and 16,** not disclosed by the references are the parameters for optimal spectral spacing between each unique channel frequency used for the individual channel, however, this is also well known by a skilled artisan prior to applicant's invention. In addition, Magana et al. is concerned with optimizing range and battery life, which a skilled artisan would recognize encompasses spectral spacing [Magana et al., column 2, lines 36-38; column 4, lines 6-13].

As to **claim 5, 12 and 14,** as noted previously, Taki et al. discloses a frequency hopping scheme. The frequencies to be chosen are presented in a frequency hopping table 36 shown in figure 14 [Taki et al.]

As to **claim 6, 9, 10, 17 and 18,** as also noted previously, Taki et al. discloses an interference detector used to detect (using select parameters) and minimize interference as is well known in the art [Taki et al. column 3, lines 7-12]. In addition, the crossfire detector 39 can be used for detecting (i.e., measuring) bit errors in the output for detecting errors for channels used in frequency hopping.

As to **claim 11 and 20**, Taki et al. also discloses a hop count (i.e., predetermined interval or time) for changing frequencies and determining parameters.

Finally, as to **claim 19**, Magana et al., discloses both a TDM system in general and a TDD system (including a hybrid TDD/FDD system).

As mentioned previously, Taki et al. presents a frequency hopping system and method for a cordless system. Magana et al. is concerned with extending operating range and battery life of a cordless system and in doing so discloses and builds upon the interworkings of various cordless systems in general and as disclosed in part by Taki et

al. Thus there exists a motivation for combing the subject matter as a whole for these two references.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US006363059B1 discloses a very similar invention to applicant's including using the ISM band as well as frequency hopping.
- US005134710A disclose the concept of having more than one carrier frequency to represent a channel. In this case, four frequencies are used to represent different channels [column 1, lines 48-54]. However, the reference also notes dynamic channel allocation using a given radio frequency [column 1, lines 66-67; column 2, lines 1-15].
- US005907812A discloses additional information pertaining to spectral separation between channels (as is well known in the art).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-3900.

Derrick W. Ferris
Examiner
Art Unit 2663

DWF
July 11, 2002

MELVIN MARCELO
PRIMARY EXAMINER